

## A SAWFLY, *PRISTIPHORA LEUCOPUS* (HELLÉN), (HYMENOPTERA: TENTHREDINIDAE) NEW TO BRITAIN

K. J. GREARSON

10 Eastfield, Ashton Keynes, Swindon, Wiltshire SN6 6PR

### ABSTRACT

Lime Sawfly, *Pristiphora leucopus* (Hellén) (Tenthredinidae, Nematinae), is reported from Britain for the first time. Notes on the distribution and identification of the insect are given, including a revision to Benson's (1958) identification key.

### INTRODUCTION

In July 2003 and June 2004 a number of *Pristiphora* larvae were beaten from limes, *Tilia* spp., at eight sites in Wiltshire and one in Norfolk (per John Badmin). Most of these were reared out. The host plants were *Tilia* × *vulgaris* Hayne and *T. cordata* Miller. The rearings produced 14 adults of a species which could not be identified using the British key (Benson, 1958). Determination was carried out by reference to Zhelochovtsev (1988). Comparison was also made with specimens of adults and larvae, collected in Finland, borrowed from the collections of the Natural History Museum, London (NHM). In 2002, 2003 and 2005 Andrew Halstead swept several *Pristiphora* females from limes in the arboretum at RHS Garden, Wisley, Surrey and he had not succeeded in identifying them. Comparison of these with the Wiltshire reared specimens and those from the NHM confirmed that they were all of the same species. *Pristiphora leucopus* (Hellén) occurs in Finland, Russia, Ukraine (Zhelochovtsev, 1988) and Germany (Andrew D. Liston pers. comm.), always in association with *Tilia*. Of the 49 British species of *Pristiphora*, 41 are believed to be monophagous (Lacourt, 1999). It is not known whether this species is a recent arrival in the country or has simply been overlooked.

### DESCRIPTION OF LARVA

The larva has a uniformly pale green body, with a smooth, shiny texture and a narrow whitish line along the flanks level with the spiracles. The larva is a leaf-edge feeder and the green body colour is the same colour as the lime leaves. There are six pairs of prolegs, one on each of abdominal segments 2–7, plus a pair of anal prolegs on the tenth and last abdominal segment. The young larva, as illustrated in Fig. 1, has a very dark head and bold black coxal marks on the thoracic legs. During the final days of feeding the head pattern, as shown in Fig. 2, becomes more contrasting with a pale greenish-grey background colour and black coronal and parietal stripes. A black marking on the frons is separate from the coronal stripe. The coxal markings are less prominent in older larvae. Full-grown larvae are 15 mm long. The head and coxal markings of the reared larvae were an exact match with the NHM loan material. When the reared larvae had finished feeding they spun a brown cocoon approximately 8 mm long among the leaves, no other medium having been provided. No change was noted in the appearance of the larvae at this stage. Adults emerged a few days later. It is estimated that the cycle from egg-laying to emergence of the adults took about three weeks. The collected larvae were reared in an indoor situation and the cocoons kept indoors.

## DESCRIPTION OF ADULTS

The reared adult females were easily assigned to the genus *Pristiphora* using Benson (1958). The description is as follows: body length 4.75–5 mm. The head, thorax and abdomen are predominantly black. The surface of the head and thorax is shiny, finely punctured and pilose. The surface sculpture of the tergites is coriaceous. Labrum and mandibles are brown, maxillary and labial palps yellowish-white, each of the latter having a small amount of dark pigment on the basal segments. The ocelli are positioned well back on the vertex leaving a very narrow post-ocellar area. Hind ocelli are twice as far apart as the distance between one of them and the edge of the occipital carina. There is a small pit behind each ocellus. The two basal antennal segments are black with an apical brown rim. The flagellar segments 3–9 are light brown with a narrow darker line longitudinally along the top, fading near the tip so that the apical segment is wholly light brown.

The only paler parts of the thorax are the outer two-thirds of the tegulae which are white merging into black at the interface with the mesonotum and the pronotum, which has pale hind margins adjacent to the tegulae.

The whitish cenchri (Fig. 3a) are more or less oval in shape, slightly angled so that the outer tip of each is slightly further forward than the inner tip and as far apart as approximately  $1.4 \times$  the length of one cenchrus. The metascutellum is shiny with a few short hairs. Wings are hyaline with a covering of microtrichia, densest at the wing tips. The stigma is large, brown in the middle and surrounded by a pale border. The costa is pale brown and slightly darker at the swollen apex.

The legs are yellowish-white with a small amount of black as follows. The coxae are black basally. The pale femora have a minimal amount of black surface shading, the extent of which varies between individuals but is never the dominant colour. (Please refer to the note below regarding the femur colour of some adults which emerged in mid-May.) The apices of the tibiae and the tarsal segments are tipped with light brown. The tarsal claws all have a large inner tooth as illustrated in Fig. 3c, best described as sub-bifid. The inner hind tibial spurs are roughly half the length of the basitarsus.

Some abdominal tergites have pale medial apical markings. These are widest and palest on tergite 1 and become smaller and darker from tergite 2 onwards. Tergites 8 and 9 have no pale markings. The sawsheath, viewed from above, is illustrated in Fig. 3d. It is short, not protruding far beyond the ninth tergite and as wide at the tip as the apex of a hind tibia when viewed from above. The saw, illustrated in Fig. 3b, has rows of hairs on the back of the lines arising from each of the saw teeth from tooth 5 onwards. The hairs over tooth 5 are short, sparse and difficult to see even under high magnification (e.g.  $\times 180$ ).

As with the larvae, the reared adults matched the NHM loan material exactly.

The adults swept by Andrew Halstead in the arboretum at Wisley Garden during mid-May had considerably more black on the femora than any of the specimens reared from larvae of the summer generations. The hind femora of five adults collected during May at Wisley had black/white in the ratio of approximately 70:30 for an individual caught on the 10 May ranging up to about 40:60 for individuals caught on 24 May. The six dark-legged species of *Pristiphora* arising from couplet 7, *P. bifida* Hellén, *P. melanocarpa* (Hartig), *P. ruficornis* (Olivier), *P. coniceps* Lindqvist, *P. armata* (Thomson) and *P. confusa* Lindqvist, of Benson's key all have a tiny amount of white on the hind femora. More than 50 examples, the majority on loan from NHM, were examined and none had more than 10% of white, most of them considerably less. Individuals of *P. leucopus* swept at Wisley in June and July were similar to the reared adults described above.



Fig. 1. A young larva of *Pristiphora leucopus* showing mainly black head and black coxal markings on thoracic legs



Fig. 2. An older larva of *Pristiphora leucopus* showing the head markings and reduced coxal markings of the final instar



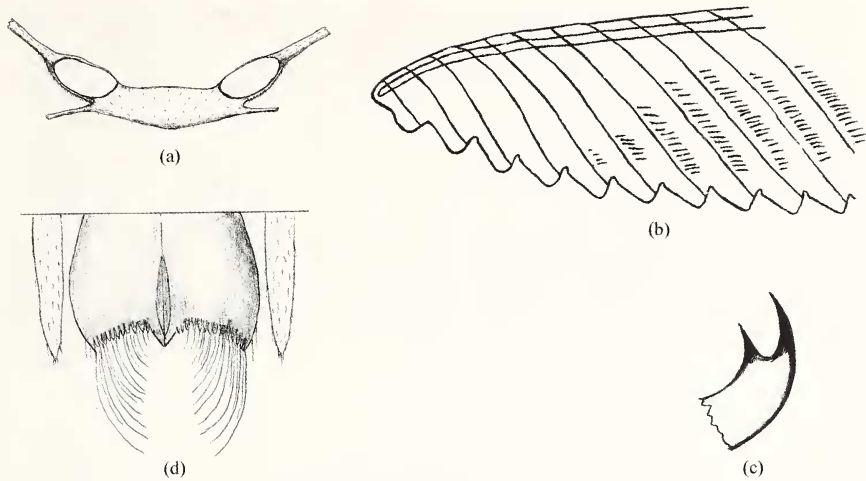


Fig. 3. *Pristiphora leucopus* female, (a) metascutellum and cenchri, (b) saw, (c) tarsal claw, (d) dorsal view of sawsheath. (drawings by K.J.Grearsen)

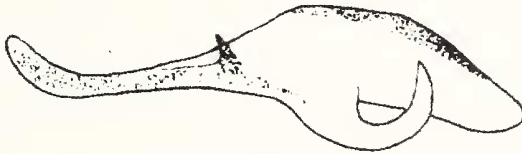


Fig. 4. *Pristiphora leucopus* male penis valve. (drawing adapted from Lindqvist, 1969)

No British male has been seen so far. Lindqvist (1969) referred to a single rearing of larvae in Finland which were overwintered successfully and from which emerged 23 females and four males in the following spring. It seems that it may be normal for males to be in the minority. Lindqvist's drawing of the male penis valve is included here as Fig. 4.

#### BRITISH MATERIAL EXAMINED

Ashton Keynes, Wilts. (SU048938)–6 July 2003–Larva on *Tilia* × *vulgaris*–reared female emerged 18 July 2003.

Warminster, Wilts. (ST879442)–8 July 2003–Two larvae on *T. cordata*–reared females emerged 22 July 2003.

Water Eaton, Wilts. (SU133950)–28 July 2003–Two larvae on *T. cordata*–reared females emerged 10 and 11 August 2003.

Water Eaton–31 May 2004–Larva on *T. cordata*–reared female emerged 12 June 2004.

Webb's Wood, Wilts. (SU045855)–1 June 2004–Five larvae on *T. cordata*–two reared females emerged 11 and 12 June 2004. Female swept 22 July 2005.